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| APPLICATION NO.            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/642,759                 | 08/19/2003  | Hwan-Guem Kim        | 1349.1249           | 3013             |
| 21171                      | 7590        | 05/19/2005           |                     |                  |
| STAAS & HALSEY LLP         |             |                      | EXAMINER            |                  |
| SUITE 700                  |             |                      | GLEITZ, RYAN M      |                  |
| 1201 NEW YORK AVENUE, N.W. |             |                      |                     | ART UNIT         |
| WASHINGTON, DC 20005       |             |                      |                     | PAPER NUMBER     |
|                            |             |                      | 2852                |                  |

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|------------------------------|------------------------|---------------------|--|
|                              | 10/642,759             | KIM ET AL.          |  |
| Examiner                     | Art Unit               |                     |  |
| Ryan Gleitz                  | 2852                   |                     |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 16 February 2005.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-31 and 33-47 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 31 and 33-47 is/are allowed.

6)  Claim(s) 1,27 and 30 is/are rejected.

7)  Claim(s) 2-26,28 and 29 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 16 February 2005 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's arguments have been fully considered and are persuasive. However, upon further consideration, a new grounds of rejection is made in view of Hyllberg (US 6,069,346) in view of Kawamura et al. (JP 2001-265149). Accordingly, this action is made non-final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyllberg (US 6,069,346) in view of Kawamura et al. (JP 2001-265149).

Hyllberg discloses a fusing roller of an image forming apparatus including a shield (17) as an outer metallic pipe (col. 4, lines 43); and a core (11) as an inner metallic pipe disposed

inside the outer metallic pipe (17). Heating layer (14) is a resistance heating body disposed between the outer and the inner metallic pipes, generating a resistance heat. Outer insulator (13) is interposed between the resistance heating body (14) and the outer metallic pipe (17) to transmit the resistance heat to the outer metallic pipe, and an inner insulator (12) is disposed between the resistance heating body and the inner metallic pipe.

Regarding claim 27, the core (11) can be made of aluminum. See col. 3, line 14.

Regarding claim 30, the resistance heating body (14) varies from 1 to 100 mils (col. 3, lines 58-59). This range is equivalent to 0.025 to 2.5 mm, which reads on the claimed value of approximately 0.1 mm in thickness.

Hyllberg is silent on the thermal conductivities of the outer and inner insulators.

However, Kawamura et al. disclose a similar fusing roller for an image forming apparatus including an outer insulator (12) with high thermal conductivity to efficiently and inexpensively attain high-speed heating by a heat roller, by efficiently transmitting the heat generated in a heating resistor layer to a paper side. See abstract, lines 1-3 and 11-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the outer insulator of Hyllberg with the higher conductivity taught by Kawamura et al. so that the outer insulator has a higher thermal conductivity than that of the inner insulator to more efficiently transmit heat to the paper. See abstract, lines 14-15.

***Allowable Subject Matter***

Claims 31 and 33-47 are allowed.

Claims 2-26, 28, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rg



Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800

REPLACEMENT SHEET  
TITLE: FUSING ROLLER OF IMAGE..  
GROUP ART UNIT: 2852  
SERIAL NO.: 10/642,759

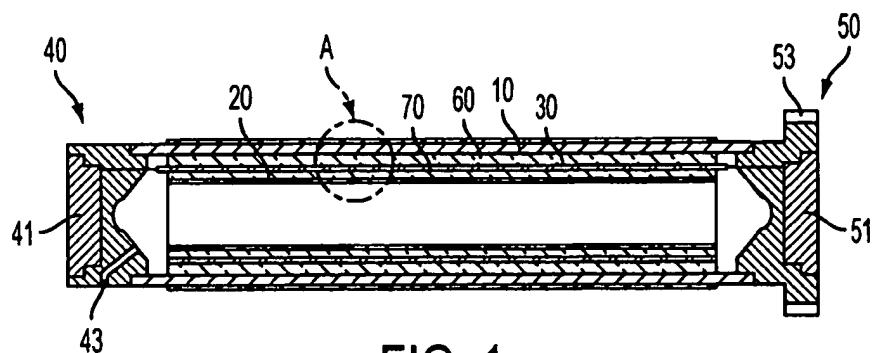


FIG. 1

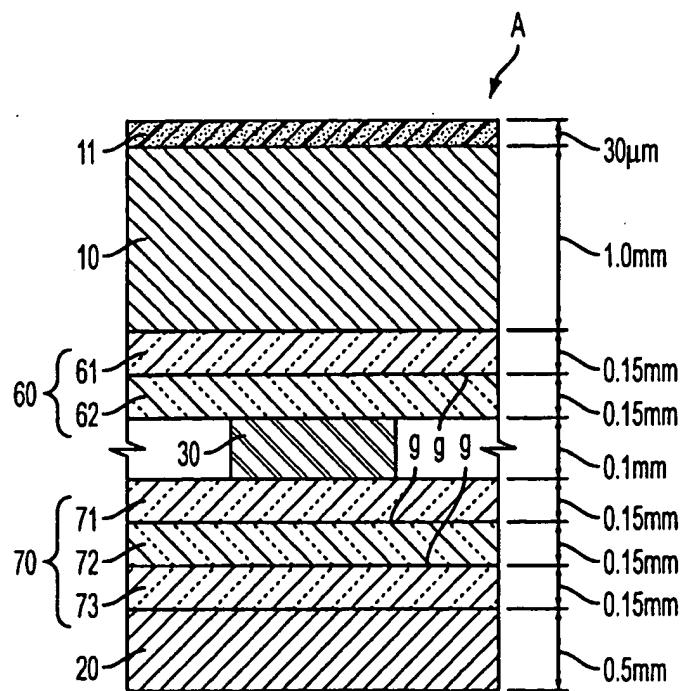


FIG. 2

Drawings Approved 5/1/05